

## CLAIMS:

Claim 1. A DC offset cancellation system for a direct -conversion receiver, comprising:

a base-band (BB) amplifier including at least one current summing stage, to which a BB signal is fed as first input current; and

a DC offset cancellation (DCOC) block serving as a negative feedback circuit fed from the output of said BB amplifier a second input current to said current summing stage, comprising:

an integrator, and

a voltage to current converter (VIC) to feed a negative feedback current to the second input current of said current summing stage.

Claim 2. The DC offset cancellation system as described in claim 1, wherein said current summing stage has differential inputs, said integrator has a differential outputs, and said VIC has differential outputs.

Claim 3. The DC offset cancellation system as described in claim 2, wherein said current summing stage is an operational amplifier.

Claim 4. The DC offset cancellation system as described in claim 2, wherein said current summing stage operates as an active low pass filter.

Claim 5. The DC offset cancellation system as described in claim 2,

wherein said integrator comprises two input resistors and two negative feedback capacitors between the differential inputs and the differential outputs of a second operational amplifier.

Claim 6. The DC cancellation system as described in claim 5, wherein said VIC are two resistors each connected between the outputs of said second operational amplifier and said differential inputs of said current summing stage.

Claim 7. The DC offset cancellation system as described in claim 6, wherein the two resistors are variable.

Claim 8. The DC offset cancellation system as described in claim 1,

wherein said current summing stage is an operational amplifier with one input grounded,

wherein said integrator has singled-ended output, and

wherein said VIC is a resistor connected between said single-ended output and said second input to said summing stage to convert the voltage output of said integrator to a current input to said second input which is at virtual ground.

Claim 9. The DC offset cancellation system as described in claim 1, where the summing stage is selected from a base-band low-pass filter stage, base-band variable gain amplifier and band-band driver stage.

Claim 10. The DC offset cancellation system as described in claim 1, further comprising more than one DCOC block feeding more than one stage of said BB amplifier.